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INTRODUCTORY REPORT OF THE EXECUTIVE DIRECTOR

ENVIRONMENTAL CONSEQUENCES OF THE ARMED CONFLICT BETWEEN IRAQ AND KUWAIT

I. INTRODUCTION

1. At the second special session of the UNEP Governing Council, held from 1-3 August 1990, the Council expressed "its concern over the invasion of Kuwait by Iraq and the resulting destruction of the environment and disruption of social and economic structures".

II. UNEP INITIATIVES

2. As his own personal concern over the actual and potential environmental effects of the military actions deepened and news of serious oil spills became known, the Executive Director consulted with his colleague, W.A. O'Neil, Secretary-General of the International Maritime Organization (IMO) on 28 January 1991 on urgent joint actions.

3. To set this process of inter-agency co-operation in motion, the Executive Director contacted all Governments concerned with the Iraq/Kuwait conflict, as well as other United Nations agencies and appropriate international organizations. This applied particularly to IMO, which had already initiated actions to assist its Member States in their response to the massive oil spills in the waters bordering Kuwait and Saudi Arabia. The United Nations agencies and organizations were then invited to participate in an urgent consultation in Geneva, while the Executive Director of UNEP remained in contact with the Governments concerned.

First United Nations Inter-Agency Consultation 1/

4. Accordingly, from 5-6 February 1991, the first United Nations inter-agency consultation was convened in Geneva to intensify co-operation and co-ordination within the United Nations system and optimize the diverse capabilities within it to enable it to respond rapidly to urgent requests from all Member States.

5. The need was recognized for a comprehensive and co-ordinating approach to the potential local and regional ecological, human health, and other social and economic consequences for the terrestrial, coastal and marine environments, as well as to the atmospheric effects.

6. The urgent need was also expressed for support of the Kuwait Action Plan of 1978 (a UNEP regional seas programme) through the revitalization of the Regional Organization for the Protection of the Marine Environment (ROPME) and the Marine Emergency Mutual Aid Centre (MEMAC) located in Bahrain. UNEP was recognized as having the lead role in the revitalization of ROPME - an organization enjoying the formal support of all eight States in the region and co-operating actively with United Nations agencies - and UNEP was requested to develop a framework of action for the region.

Expert mission to region

7. At the same time, the Executive Director sent a three-person expert mission to the region to make a preliminary impact assessment of the environmental situation in the conflict area, paying particular attention to the environmental problems posed by oil slicks, and to establish an effective structure for a continued flow of objective environmental information.

8. The environmental situation in the region is now being monitored by UNEP through its GEMS/GRID facility in Geneva and by IMO. IMO had already established a round-the-clock co-ordinating centre in London and had set up a similar centre in Bahrain. The World Conservation Union (IUCN) had also sent an observer to the region and is co-ordinating ecological information in conjunction with the World-wide Fund for Nature (WWF).

1/ United Nations agencies and other bodies represented at the two Geneva United Nations inter-agency consultations were: the Food and Agriculture Organization (FAO), the International Atomic Energy Agency (IAEA), the International Maritime Organization (IMO), the United Nations Educational, Scientific and Cultural Organization (Unesco), the Inter-governmental Oceanographic Organization (IOC), the United Nations Conference on Environment and Development (UNCED), the United Nations Development Programme (UNDP), the Office of the United Nations Relief Co-ordinator (UNDRO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO) and the World Meteorological Organization (WMO). The following units within UNEP were represented: the Global Environment Monitoring System Programme Activity Centre (GEMS/PAC), Industry and Environmental Office (IEO), International Register for Potentially Toxic Chemicals Programme Activity Centre (IRPTC/PAC), the Co-ordinating Unit for the Mediterranean Action Plan (MEDU) and the Oceans and Coastal Areas Programme Activity Centre (OCA/PAC). Other organizations represented were: the World Conservation Union (IUCN) and the Regional Organization for the Protection of the Marine Environment (ROPME). Other United Nations agencies and organizations invited, but unable to attend, have been kept up-to-date on the results of the consultation.

9. Unesco and its IOC has also collected data and consulted several specialists from its roster of experts in regard to the biological and chemical effects in the region, the physical oceanography and dispersion, and the use of clean-up techniques.

Support for ROPME

10. In early February, UNEP also dispatched a senior staff member to Bahrain to help in the revitalization of the Regional Organization for the Protection of the Marine Environment (ROPME) and to assist ROPME in the implementation of its role in co-ordinating the activities of United Nations agencies, other organizations, and representatives of Governments providing assistance. The staff member remained in Bahrain until he recently joined the United Nations mission to Kuwait, where he and one other senior UNEP expert participated specifically in the assessment of environmental damage caused by the conflict in that country.

11. Additionally, on 22 February 1991, the Executive Director sent the Director of UNEP's Oceans and Coastal Areas Programme to UNEP's Regional Office for West Asia in Bahrain to help strengthen its ability to provide assistance to the region in the environment field and to present to the ROPME meeting a framework of action developed by UNEP. This framework received unanimous support from the ROPME meeting.

12. During this meeting, the Secretariat of ROPME presented a proposal for joint action to combat the oil spill in the region. The principal components of the proposal include surveillance, modelling, identification of sensitive areas, updating the inventory of personnel and equipment available for combating, containment, and removal of oil.

UNEP Action Plan and the Second United Nations Inter-Agency Consultation

13. Following the approval at the ROPME meeting of the UNEP framework of action, UNEP developed a draft action plan for the mitigation, elimination, rehabilitation and protection of the environment in the Kuwait Action Plan region. This draft action plan was presented to a second United Nations inter-agency consultation in Geneva on 15 March. The draft plan of action, based on the approved framework of action, was discussed, and approved. It envisaged placement of a Task Team core group in Kuwait by the middle of April and the completion of at least high priority surveys, assessments, and action plan designs within 90 days thereof.

14. The focus of the action plan is on four separate but interlinked areas: the coastal and marine environment, the atmosphere, inland terrestrial areas, and hazardous wastes. Of crucial importance to the success of the action is the establishment of a multi-disciplinary data-base, to be located - circumstances permitting - in Kuwait.

15. The activities proposed under the UNEP action plan are to be carried out in concert with other United Nations agencies and organizations, the Governments of the region, and other Governments providing assistance. Every effort will be made to build up on data and information already generated by teams currently operating the area.

Trust Fund

16. An estimated budget of between US$3.0 million and US$3.5 million will be required for the calculated number of person-months, equipment, etc. required. These moneys are expected to come from a special UNEP trust fund set up for this purpose. Coinciding with both the second Geneva United Nations inter-agency consultation and the informal ministerial consultation held in Nairobi from 11-13 March, the Executive Director of UNEP established a Special Trust Fund devoted exclusively to the financing

of the United Nations inter-agency action plan (excepting the activities by IMO, which are funded by a special IMO trust fund). A significant initial contribution of US$1.11 million was received from Japan, while a number of other States indicated that they, too, would contribute, either in cash or in kind, i.e. seconded experts, equipment, or data gathered by teams already operational in the region. Such timely action will be appreciated and recognized by the Governments of the region and will qualify the United Nations system to play an effective role in making the Governments of the region contribute substantially at a later stage in financing the detailed plan of action covering mitigation, elimination, rehabilitation and environmental protection of the area.

Funding for the implementation of the Plan

17. Funding needed for UNEP's co-ordinating function, in addition to support by the ROPME States, would have to be mobilized from donor countries and non-governmental and private institutions. This would be in addition to the Fund established by the Secretary-General of IMO for the special purpose of co-ordinating the cleaning activities of the oil spills. ROPME support will be indicated by the Organization's Council meeting tentatively scheduled for the end of June.

18. There is a need and possibility for an innovative global fund-raising mechanism, initially only for the environmental rehabilitation in this particular area, but subsequently for universal application in case of other environmental emergencies. The Executive Director of UNEP has initiated consultations with the parties concerned with a view to developing a proposal to this effect.

III. LEGAL ASPECTS

19. Environmental disruption is an inevitable concommitant of war. In many instances, this combat-associated disruption of the environment is an incidental outcome of hostile military actions. In other instances, it is an intentional component of a belligerent's strategy. The salient legal constraints on environmental disruption in time of war are summarized here, especially those that might apply to the Iraq/Kuwait conflict, together with and indication of their level of formal acceptance.

(a) The Haque Conventions II of 1899 and IV of 1907 on the Laws and Customs of War on Land

20. Both of these treaties commit their Parties - when in the role of occupying State - to safeguard the public buildings, real property, forests, and agricultural works of the occupied State, administering them according to the rules of usufruct. To date, approximately 31 per cent of all nations are Parties to one or both of these treaties (including four of the five permanent members of the United Nations Security Council), although not Iraq.

(b) Berne Protocol I of 1977 (additional to the Geneva Conventions of 1949) on the Protection of Victims of International Armed Conflicts

21. This treaty commits its Parties to take care in warfare to protect the natural environment against widespread, long-lasting, and severe damage. Prohibited, therefore, are methods or means of warfare that are intended, or may be expected, to destroy, remove, or render useless - for any motive - objects indispensable to installations, foodstuffs, crops, livestock, agricultural areas, and irrigation works. The Parties also agree not to attack dams, dikes, and nuclear electrical generating

stations, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. To date, approximately 57 per cent of all nations are Parties to this treaty (including two of the five permanent members of the United Nations Security Council), although not Iraq.

(c) World Cultural and Natural Heritage Convention of 1972

22. The Parties to this treaty recognize that certain cultural and natural heritage sites and monuments are of outstanding universal value and constitute a world-wide heritage whose protection is the duty of the international community as a whole. The Parties undertake not to take any deliberate measures that might damage, directly or indirectly, any cultural or natural heritage situated on the territory of other Parties. To date, approximately 67 per cent of all nations are Parties to this treaty (including all five permanent members of the United Nations Security Council), and including Iraq, which at present has registered one such historic monument.

(d) Geneva Protocol of 1925 on Chemical and Bacteriological Warfare

23. The Parties to this treaty accept a prohibition of the use in war of all chemical agents, and also of the use of bacteriological methods of warfare. To date, approximately 73 per cent of all nations are Parties to this treaty (including all five permanent members of the United Nations Security Council), and including Iraq.

(e) Environmental Modification Convention of 1977

24. The Parties to this treaty undertake not to engage in military or any other hostile use of environmental modification techniques (i.e., deliberate manipulations of natural processes) having widespread, long-lasting, or severe effects as the means of destruction, damage, or injury to other Parties. To date, approximately 32 per cent of all nations are Parties to this treaty (including three of the five permanent members of the United Nations Security Council), although not Iraq.

(f) Proposed action by the Governing Council of UNEP

25. It is obvious that all these treaties need to be thoroughly reviewed particularly (e). The Governing Council may wish to recommend to the General Assembly that it review this treaty and consider strengthening it.

IV. INFORMAL MINISTERIAL CONSULTATION

26. At the Informal Ministerial Consultation held in Nairobi from 11-13 March 1991, the Executive Director invited discussion on environmental aspects of the Iraq/Kuwait conflict. Profound appreciation was voiced by the participants for the UNEP initiatives. They suggested that UNEP should play a principal role in the co-ordination of the activities related to the mitigation of the environmental damage caused by the conflict. There was also general support for the idea of a United Nations system for dealing with environmental emergencies and UNEP was encouraged to set up an international register of suitable experts and equipment required in cases of environmental emergencies, as well as a register of areas of ecological risk. UNEP was also urged to ensure the inclusion in any post-war arrangements of both the environmental and economic aspects of hostilities.

27. Furthermore, it was emphasized that transboundary effects of the conflict should be addressed, while existing legal instruments pertaining to the use of the environment in war be closely examined. It was also proposed UNEP should also have the flexibility to respond in future cases

of environmental emergencies, for instance through larger fund programmes rather than being forced to establish special trust funds. The need for the capability to anticipate and avoid environmental problems was strongly underscored.

THE IRAQ/KUWAIT CONFLICT - THE ENVIRONMENTAL CONSEQUENCES

28. A special UNEP mission visited Saudi Arabia from 4-14 February 1991, at the time of the major oil slick off the east coast of that country. In March, two UNEP staff participated in a United Nations mission to Kuwait. UNEP's role in this mission was to carry out a first rapid reconnaissance survey of the post-conflict environmental situation in Kuwait. The UNEP team was in Kuwait from 16 March - 2 April 1991, during which time it visited, or carried out survey flights over, most of the country. The following report is based primarily on the findings of these missions, supplemented by other reliable information that has subsequently become available by 24 April.

Oil fires

29. The burning of the oil wells in Kuwait is the most widely known and obvious consequence of the Iraq/Kuwait conflict. Estimates of the number of wells that were burning vary from 500 to 650. The UNEP mission felt, however, that this might be an underestimate and that perhaps 700 or more wells were alight when the oil field fires were at their maximum. Oil industry experts considered that at the period of maximum conflagration, four to six million barrels of crude oil were being consumed daily - roughly twice the normal daily production. This figure is likely to have been greatly reduced by now.

30. Since initial ignition, the oil field fire situation has been gradually changing. Many wells are, unaided, diminishing their burn rate or are extinguishing themselves due to natural induction of ground water in a process known as "coning". At the time of the mission's departure it was estimated that some 40-50 well fires had gone out and that many more were in the process of going out.

31. This natural extinguishing process posed a new environmental problem that came into prominence during the course of the mission. Wells no longer burning continued to gush onto the land large quantities of oil that converged to form large oil lakes. At one time torrents of oil overran the land - oil erosion was seen by the mission - and it seemed that this surface oil would make its way down natural drainage lines to the sea, thus posing a new threat to the marine environment. In an effort to curtail this oil flow, attempts were made to relight some of the wells that were no longer burning. This had limited success and, to the mission's knowledge, only six wells were actually reignited. The surface oil flow was finally controlled by containment through construction of earth dams and berms. It will not finally be overcome until the flow of all the gushing wells is stopped through capping. At the moment, capping is proceeding at an estimated rate of 8-10 wells per week.

32. Emissions from the burning wells take two forms: the visible soot and particulates and the invisible gases. Each oil field has its own smoke plume (as does each wellhead fire), which is directed by the lower level winds and so act as weathervanes about the oil field according to wind direction. The plumes gradually rise through the lower atmosphere until, in general, they reach an upper surface at about 1,800m. and a lower surface at about 1,000m. At a 1,000 km. distance, the plume width, judging from satellite images can be several hundred kilometres wide. At present, the plumes do not seem to be rising to more than 4,500-5,000m., though

there are almost certain to be local emission spikes rising above this level. Wind directions at different levels above the ground may at times cause different elements of the plumes to move in different directions in a complex pattern.

33. Oil smoke is particularly efficient at absorbing solar radiation, so that in the centre of areas covered by the plumes, there is little or no light and air temperature can be depressed by 10°C or more. The weathervane effect, however, means that the same area of ground or water is not covered by the plumes for very long. At the moment, emissions do not seem to have reached upper atmospheric levels, so any cooling effects are likely to be local, or perhaps regional, but not global, in extent. There is also constant fall-out of particles along the length of the plumes, so that only the smallest particles remain at the extreme limits of the plumes.

34. There are still few good measurements of the contaminant content of the air in the oil fields and in surrounding regions affected by the smoke plumes. Those that have been made suggest that there has been a slight increase in levels of sulphur compounds, carbon monoxide and total hydrocarbons, bringing them to about the same levels as those found in Kuwait before the fires started. Kuwait at that time, however, had an active oil processing industry, other commercial activities and many cars - a situation that differs from that of today. The southern oil fields, particularly Wafra, differ from the others in that they are known to be producers of hydrogen sulphide and sulphur dioxide and it is likely that the main releases of these substances will come from the southern fields. As yet there are no available ground measurements from the southern area.

35. There are insufficient data to be able to state with any certainty the probable effects of exposure to these smoke plumes on human and ecosystem health. At the moment, knowledge is limited to a few measurements taken in the field, data from some fixed ground stations in Kuwait City, and data taken in the smoke plumes by a research aircraft. The latter recorded sulphur dioxide levels of 1,000 ppb. in part of the plumes 100 km. downwind of the source. Such levels could cause problems for asthmatics or those with other respiratory problems if the plumes were wafted to the ground; most healthy people could endure such exposure without damage to health. Although there may be acidic rainstorms, these are unlikely to pose a long-term problem to the soils and waters of the region, which would require repeated exposure to acidic deposition before they became significantly affected.

36. Frequently repeated good air contamination measurements at ground level in a number of locations, as well above ground within the plumes, remain essential and must be given the highest priority.

Oil in the sea

37. Shortly after 22 January 1991, there was a massive release of crude oil into the sea from the Kuwait Oil Company Sea Island terminal off Al-Ahmadi and from three oil tankers anchored off the North Pier. Together, these releases amounted to some 10 million barrels of crude oil. Further release of oil was prevented by the bombing of the Al-Ahmadi tank farm loading manifolds, the Sea Island terminal and one of the tankers.

38. A USA National Oceanic and Atmospheric Administration (NOAA) satellite image taken on 25 January shows a smoke plume from the damaged Sea Island terminal and the oil slick, by this time some 50 km. long and 8 km. wide. Assuming an average thickness of 0.5 cm. for the slick, its total volume could have been about 13 million barrels - more than enough to contain the

10 million barrels thought to have been released. As this slick moved down the Kuwait coast toward Saudi Arabia, it rapidly lost much of its volume by evaporation and by extensive dispersal in the form of sheen - a fine surface film of oil.

39. On 24 January, this slick was reportedly observed entering Saudi Arabian territorial waters in the region of Khafji (28°25'N). South of the Saudi Arabian-Kuwait border, it was augmented by oil from the loading terminal and other installations damaged during military operations at Khafji at the end of January and the beginning of February. ARAMCO estimates put the Khafji oil release at between 100,000 and 500,000 barrels.

40. On 7 February, the UNEP mission overflew the oil slick off the coast of Saudi Arabia and estimated its total volume as being about 1 million barrels. The slick was then 120-130 km. long and 5-25 km. wide, broken into several patches and bands. By 11 February, the slick extended along the coast of Saudi Arabia from 28°15'N (just to the north of Mishab) to Abu Ali island (27°20'N). A fortunate combination of winds and currents have kept this slick more or less stationary within these limits so that very little oil has moved beyond Abu Ali island towards the southern parts of Saudi Arabia and other countries to the south. The affected coast of Saudi Arabia has, however, been severely impacted, although sufficient steps were taken to prevent damage to important desalination and industrial plants. So far, some 400,000 barrels of crude oil have been recovered from this slick.

41. At the time of the UNEP mission (February 1991), it was not possible to overfly Kuwait waters for security reasons, so it remained conjectural as to whether there were further oil slicks in the region. Subsequent surveys, including those of the UNEP team, which was part of the United Nations mission as of 2 April, failed to find any extensive oil slicks, although there were patches of sheen.

42. The aerial survey of the coast of Kuwait and its off-shore waters (20 and 22 March 1991) showed no indication of massive fouling of beaches by oil. In only a few scattered sites along the coast were oil traces and deposits found. Some 10,000 barrels of oil were in the commercial harbour at Shuaiba; this had resulted from a separate secondary release from Shuaiba harbour off-loading facilities, including a waste oil storage tank, that took place in late February. Patches of sheen were noted along the coast where winds and currents had driven them against peninsulars.

43. The mission, however, did find that there was an extensive film of particulates on the water surface, which formed into bands and whorls very like an oil slick. These particles almost certainly came from the smoke plumes from the oil well fires. Their impacts on coastal and marine ecosystems are not known. It was noted, however, that one tide could cover a beach with black particulates that the next tide would remove, leaving the beach clean. It is possible that these particulate patches - which are extensive - are being mistaken for oil slicks.

Land degradation

44. The conflict in Kuwait led to three main types of land degradation:

(a) Defensive constructions such as hardened gun emplacements, hardened personnel shelters, tank and mortar revetments, dug-in ammunition dumps, fuel bowser pits and a wide variety of fences, trenches and shelters. Trenches filled with oil to be lit during battle were a special feature of the Kuwait conflict;

(b) Off-the-road vehicle movement results in tracks that break up both the vegetation cover and the upper soil layers, which can lead to erosion by wind and water where such damage has been severe; there will almost certainly be an increase in the amount of wind-blown material contributing to an increase in the severity of sandstorms during the season in which they are prevalent. In some cases, however, especially on gentle gradients, such tracks can result in better rainwater penetration within them and so to subsequent improved plant growth;

(c) Explosion damage from bombs, missiles and shells result in craters. Bomb and shell craters tend to occur in localized groups. In each crater the vegetation is removed and the upper soil layers removed or rearranged. In some cases, however, such craters fill with water, become centres of habitat diversity, and act as small wildlife refuges. Craters with water, algae and increased plant growth were seen.

45. The country was surveyed, mainly by air, to determine the severity of impact resulting from these three types of land damage.

46. Much of the coast has been very severely damaged by these causes, though there are areas, particularly in the north, where such effects are slight to moderate. In general, the south and the north have been affected most, the south by defensive constructions, the north by off-the-road tracks resulting from armoured vehicle movement and battles. The extreme west and southwest of the country and Bubiyan Island in the northeast have hardly been affected by this sort of damage.

Unexploded ordnance

47. Mines and other unexploded ordnance pose one of the most serious and potentially long-lasting threats to the environment of Kuwait. Vast minefields were laid along all the coasts and in broad bands across the south of the country. Ports and harbours are faced with extensive sea minefields. In addition to the minefields, unexploded ordnance is widespread, being scattered around every site where there was conflict, even if only a few armoured vehicles were involved. With few exceptions, these conflict sites are unmapped. At the time of the mission, two to five people were admitted daily to Kuwait City hospitals with explosion injuries - mainly to arms and legs. During the mission, the military unexploded ordnance clearance operation within Kuwait celebrated the removal of the 3,000,000th explosive item.

48. Mine clearance operations are not always totally successful and a danger from missed items always remains. In Kuwait this will be most serious in the coastal zones, which form the main recreational areas for the people.

49. It may not be possible to clear the huge minefields in the south, large areas of which may have to be securely fenced and left. If this is done, it will be essential to leave really safe passages through these minefields, made at intervals to allow nomadic peoples and their livestock to move seasonally.

Agriculture and fisheries

50. Agriculture and fisheries were important but small parts of the economy of Kuwait. At the time of the mission, both were at an almost complete standstill. The vital irrigation system was not functioning, so that even perennial crops were threatened and might not survive the coming summer without irrigation water. The majority of livestock perished, and those that did survive are being hard hit by the consequences of the oil fires and consequently may not survive. Fishing activities have almost ceased because fishing boats and fisheries equipment were either destroyed or taken away. Marine minefields effectively prevent fishing at present.

Infrastructure

51. The environment and environment-related infrastructure of Kuwait ceased to function, and in many areas, disappeared. Equipment, large and small, was destroyed or taken away. It will take some time before any environment-related sector will regain the importance it had before the conflict. Restoration of these services and facilities must be a priority for Kuwait because of the nature of the oil industry upon which it depends and the potential of that industry for impacts on the environment.

VI. MAIN CONCLUSIONS AND RECOMMENDATIONS

52. Although an objective and accurate assessment by UNEP of the environmental problems resulting from the hostilities is to this day seriously hampered by restrictions on free access to many parts of the sea area and the as yet classified nature of some relevant information gathered by the military, it is recommended:

- To further enhance co-operation, greater involvement and utilization of skills and resources of both the United Nations agencies and organizations and Governments willing and able to provide expertise and resources;

- To further revitalize the Regional Organization for the Protection of the Marine Environment (ROPME), an organization comprised of the States around the sea, and strengthen its secretariat to deal with the war-related regional environmental problems;

- To carry out immediate surveys of the conflict area to identify all smoke emission sources, categorizing them by type and expected burn duration, if left, as well as to carry out ecological surveys of the conflict zone as soon as possible in order to ascertain the extent of the ecological damage caused. This should include specialized ground and air surveys of the coastal area of the region, paying particular attention to those areas affected by amphibious landings. Based on these surveys, appropriate remedial activities and programmes should be designed and put in place over the following two to three years. These should involve the establishment of a specialized data-base;

- That national environmental monitoring and assessment centres should be set up in each country to ensure that environmental and resource data are fed into the planning and decision-making processes of each Government concerned;

- That, as soon as the situation permits, there should be an immediate survey of all known nuclear, biological and chemical warfare manufacturing production centres in the area to ensure that there has been no contamination of adjacent and other areas;

- To maintain close liaison with the military of the conflict participants to locate and demarcate all mine fields, including those at sea, for the subsequent clearance of these areas. The initial survey should be completed within six months, the clearance operations within three years;

- That information be obtained, now scattered and some of it inaccessible, about the risk from release of hazardous chemicals from damaged industrial plants.

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ENVIRONMENT IN THE 1990s - CHALLENGES AND DEMANDS

Introductory Report of the Executive Director

Addendum

EARLY WARNING AND FORECASTING OF ENVIRONMENTAL EMERGENCIES: THE ROLE OF THE GOVERNING COUNCIL IN STRENGTHENING THE IMPLEMENTATION OF INTERNATIONAL LEGAL INSTRUMENTS IN THE FIELD OF THE ENVIRONMENT AND IN HELPING IN THE PREVENTION AND ASSISTING IN RESOLUTION OF ENVIRONMENTAL CONFLICTS; A PROPOSED UNITED NATIONS CENTRE FOR URGENT ENVIRONMENTAL ASSISTANCE; AND, THE ESTABLISHMENT OF A GREEN BRIGADE

Summary

In section V of his report to the Council at its second special session (UNEP/GCSS.II/2), the Executive Director touched briefly on numerous subjects including: the role of the Governing Council in assisting in the avoidance of environmental conflicts and in their resolution when they occur as well as in the verification of the implementation of environmental agreements; the establishment of a United Nations centre for urgent environmental assistance; a mechanism for early warning and forecasting of environmental degradation and emergencies; and the establishment of a Green Brigade. In its decision SS.II/1, the Council requested the Executive Director to submit a report on these and other issues to the Council at its sixteenth session.

Although the Executive Director is submitting the requested report to the Council (UNEP/GC.16/4), it was felt advisable to elaborate in more detail on some of the subjects covered in that report; hence, the present addendum, which deals primarily with a single, basic theme - namely theavoidance or amelioration of environmental emergencies. The first step, one already anticipated by the General Assembly in its resolution 44/224, concerns the capacity of the United Nations to monitor, assess and anticipate environmental threats. The Council has before it, in document UNEP/GC.16/17, the Secretary-General's report on this subject.

In anticipation of environmental threats, one way in which the international community responds is by adopting international legal instruments, such as the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol, designed to counter the threat to the

ozone layer, or the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. But what is lacking is a systematic means of verifying the implementation of such legal instruments. This issue is addressed in part I of the present report.

Part II deals with the role of the Governing Council in helping to prevent and assisting in the resolution of environmental conflicts.

In part III, the Executive Director is presenting the report called for by the Council in its decision 15/10 on the establishment of a United Nations centre for urgent environmental assistance.

Lastly, part IV concerns the establishment of a kind of corps of volunteers for the environment or "Green Brigade".

All these issues have surged forcefully to the fore because of the perilous environmental conditions that emerged as a consequence of the crisis resulting from the situation between Iraq and Kuwait. A number of UNEP actions - notably its initiative to hold inter-agency consultations in early February to deal with the problem; the unanimous support for UNEP's proposed framework for action at the meeting convened by the Regional Organization for the Protection of the Marine Environment (ROPME), which took place in Bahrain later in February; the approval by the second inter-agency meeting in Geneva on 15 March of the Action Plan proposed by UNEP; and the establishment of a task team for implementing the Plan, as well as the establishment within UNEP of a trust fund for this purpose - all provide examples of what a centre for urgent environmental assistance can do.

It should also be noted that in the wake of the crisis resulting from the situation between Iraq and Kuwait, UNEP received numerous letters and other communications from young people offering their services to mitigate environmental damage in the region. This in itself testifies to the timeliness of founding a "Green Brigade".

I. THE ROLE OF THE UNEP GOVERNING COUNCIL IN STRENGTHENING THE IMPLEMENTATION OF INTERNATIONAL LEGAL INSTRUMENTS IN THE FIELD OF THE ENVIRONMENT

1. The world community has accumulated a large number of legal instruments in the environmental field. The number in only one category - multilateral treaties - is approximately 150. Yet the efficiency and effectiveness of environmental legal regulation leave much to be desired. Among the major reasons for this deficiency are lack of compliance with existing legal commitments and the inherent weakness of enforcement procedures. Verification of the implementation of international legal instruments in the field of the environment is a potentially powerful way of enhancing environmental protection through juridical means.

2. International environmental agreements, as a rule, incorporate obligations to report on implementation (see, for example, the Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, the London Dumping Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Long-Range Transboundary Air Pollution, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer. Verification carried out by the contracting parties through the creation of special monitoring institutions is another common method. There are numerous treaties on river and lake protection and wildlife protection and other subjects under which international commissions or implementation committees have been established, a recent example being the Implementation Committee set up under non-compliance procedure adopted by the Second Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Pro.2/3, annex III). The competence and responsibilities of international institutions entrusted with verification functions are usually much wider than simply registering the facts or complaints of non-compliance. The relevant provisions of CITES and the Basel Convention on hazardous wastes may serve as examples. There are also precedents for entrusting international organizations, such as the Commission of the European Communities and the International Atomic Energy Agency (IAEA) with verification responsibilities, but an important requirement is the competence of the organization in the relevant field. Another variation is the integrated verification responsibility both of the bodies created under the particular juridical instrument and of the main organs of the United Nations system. The 1977 Convention on the Prohibition of Military or any other Hostile Use of Environmental Modification Techniques, for example, provides for the direct involvement of the United Nations Security Council in case of non-compliance.

3. The involvement of the UNEP Governing Council in the verification of environmental treaties is implicit in its responsibility "to keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments" (General Assembly resolution 2997 (XXVII), section I, para. 2 (d)). There are several ways in which UNEP could participate actively in the verification of environmental treaties: UNEP/GEMS could monitor the efficacy of legal regulations by checking the impact of the treaties on the relevant indices of the environmental area to which the treaties are addressed; UNEP should also continue to update on a regular basis the Register of International Treaties and Other Agreements in the Field of Environment.

4. Another option might be creation of an Inter-Secretariat Co-ordination Committee convened by the UNEP Governing Council, chaired by the UNEP Executive Director or his senior representative, and composed of the chief officers of the secretariats of environmental conventions. The Committee could meet on a regular basis with continuous technical services provided by the UNEP secretariat and exercise the following functions:

(a) Receive and consider regular GEMS reports on the impact of international legal regulations on key indices of the natural environment;

(b) Receive and review regular reports from individual secretariats on the implementation of the relevant legal instrument;

(c) Consider and evaluate verification/compliance/enforcement mechanisms;

(d) Report regularly to the Governing Council on the state of implementation of international environmental legal instruments and recommend to the Governing Council, for its consideration and further recommendation to the relevant conferences of contracting parties, ways and means of improving further the verification mechanisms and practices under environmental treaties;

(e) Draw to the attention of the Governing Council particularly serious threats of damages to global environment of which the Committee became aware through performing its functions;

(f) Perform, as appropriate, any other functions that may be entrusted to it by the Governing Council.

5. To facilitate the operation of such a mechanism, the Governing Council could add to its regular reporting to the United Nations General Assembly a report on the state of implementation of international environmental legal instruments on the basis of the reports submitted by the Inter-Secretariat Co-ordination Committee to the Governing Council. The Governing Council might also consider inviting contracting parties to environmental agreements to establish mechanisms for monitoring their implementation in those cases where the agreements themselves do not set up such mechanisms.

6. The Governing Council has hitherto taken the lead role in initiating measures for the negotiations and conclusion of international environmental agreements designed to safeguard and enhance the environment for the benefit of present and future generations of humankind. The above scheme for the monitoring of the implementation of such agreements by the Governing Council would provide it with an opportunity to ensure that such instruments are appropriately and adequately implemented and identify areas in which the development of further international environmental agreements is advisable.

II. THE ROLE OF THE GOVERNING COUNCIL IN HELPING IN THE PREVENTION AND ASSISTING IN RESOLUTION OF ENVIRONMENTAL CONFLICTS

7. Recent years have witnessed a sharp increase in the number and range of environmental conflicts. 1/ A characteristic of environmental conflicts is a divergence of interests between neighbouring States or between an

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1/ As employed applied here, the expression "conflict" is broadly understood not only as disputes between States, but as any controversy over natural resources and/or impacts of environmental harm.

individual State and the international community as a whole. Among the more prevalent types of current environmental conflicts are those touching on the impacts of: (i) transboundary air pollution, including acid rain; (ii) transboundary water pollution; (iii) overuse or misuse of such shared natural resource - lake, river, underground acquifer, forests; (iv) transboundary movement of hazardous wastes; and (v) the impacts of global environmental problems - climate change, ozone depletion and loss of biodiversity - on those who are not necessarily their main cause. Such conflicts, some with potentially explosive political content, have brought into sharp focus the urgent need for specific measures for their prevention or resolution.

8. As a general rule, legal disputes should be referred to the International Court of Justice. UNEP's Governing Council by its very mandate and the wide experience UNEP has acquired over nearly two decades of activity in the field of environment, seems well suited to make a substantial contribution in helping to prevent environmental conflicts and in resolving them when they occur. In its resolution 2997 (XXVII), the General Assembly provided the UNEP Governing Council with the implied powers to help in preventing and assisting in the resolution of environmental conflicts. By paragraph 2 (d) of this resolution, as indicated in paragraph 3 above, the Governing Council is empowered "to keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments". The Manila Declaration on the Peaceful Settlement of International Disputes (General Assembly resolution 37/10) identified "utilizing ... the subsidiary organs established by the General Assembly in the performance of its functions under the Charter" as an option for early peaceful settlement of disputes. This provision relates directly to the UNEP Governing Council as a subsidiary body of the United Nations General Assembly established to carry out environmental functions under the United Nations Charter.

9. The task of helping in the prevention and resolution of environmental conflicts is nothing new to UNEP. The UNEP regional seas programme is designed not only to protect the environment of a given regional sea, but also to prevent environmental disputes between "co-owners" of that sea. UNEP action plans for the rational management of lake and river basins, such as the Chad and Zambezi basins, are also designed to anticipate and avoid potential environmental disputes. Moreover, there have been several instances where UNEP has acted, upon request, as mediator or facilitator in environmental disputes. Just recently, at the request of the two Governments concerned, UNEP sent an expert team to examine the conflicting claims of two European States concerning transboundary air pollution. The UNEP team studied the situation, ascertained the facts and formulated a co-operative scheme between the two Governments to solve the problem and enhance the environment - for the benefit of all concerned. This is clearly an approach to conflict resolution that could be very useful, namely that UNEP, at the request of a Government, would act as a facilitator to assist Governments to work together to structure a problem, to identify its scientific aspects and propose alternative solutions. The Governments themselves would then be responsible for deciding on how they wished to address the problem.

10. The Governing Council could carry out this task in various ways, e.g. directly, through a subsidiary body or by mandating the Executive Director in specific incidents. There are also various means by which such a task could be performed by the Governing Council: (i) representing environmental interests of international community as a whole for the benefit of present and future generations; (ii) early warning of any serious environmental threat that might cause an international conflict;

(iii) establishing fact-finding bodies, upon request, utilizing the most highly qualified independent environmental experts, and rendering good offices and/or conciliation and/or mediation services; and
(iv) requesting, in accordance with Article 96 of the Charter of the United Nations, advisory opinions from the International Court of Justice on legal questions related to environmental conflicts.

III. A PROPOSED UNITED NATIONS CENTRE FOR URGENT ENVIRONMENTAL ASSISTANCE

Background

11. Concern over industrial accidents and their transboundary effects, high losses triggered by natural disasters, and the severity of global as well as localized environmental deterioration has generated widespread consensus on the need to strengthen international response to environmental disasters. Such concern led to the adoption of Governing Council decision 15/10 in May 1989, requesting the Executive Director to consult Governments, United Nations bodies and specialized agencies and competent regional organizations on the advisability of establishing a United Nations centre for urgent environmental assistance, the financial implications of doing so, and the contribution existing United Nations activities could make to such a centre.

12. International co-operation on environmental emergencies was also the subject of discussion at the forty-fourth session of the General Assembly. In its resolution 44/224 of 22 December 1989, the Assembly recognized the need to strengthen international co-operation in monitoring, assessing and anticipating environmental threats and rendering assistance in cases of environmental emergency.

Government and agency views on the centre

13. In accordance with paragraph 1 (a) of Governing Council decision 15/10, the Executive Director invited Governments, United Nations agencies and other relevant organizations to present their views on the proposed centre. Thirty-seven countries and 20 agencies offered views and suggestions on the subject; rarely has there been so high a response rate to a letter of the Executive Director in pursuance of a Governing Council decision. One third of the Government responses came from industrialized nations and two thirds from developing countries.

14. An analysis of the responses showed strong support, in principle, for the establishment of a centre. Nearly all responses testified to the need to improve the United Nations capacity to respond efficiently and appropriately to environmental emergencies. Governments and agencies cited a number of reasons for supporting the initiatives, in particular: (i) fostering international co-operation on environmental emergencies; (ii) addressing issues arising from transboundary accidents; (iii) a global response to urgent environmental problems which have global implications; (iv) promoting technology exchange that would help prevent and alleviate environmental emergencies; (v) improving preparedness and response to emergencies, which recent environmental disasters have demonstrated are inadequate; (vi) combating the environmental deterioration that leads to disasters.

15. Views concerning the possible scope and functions of the centre varied considerably. Developing countries generally wanted the centre to deal with a wide range of emergency situations, including natural disasters, industrial accidents and long-term ecological problems, such as severe

pollution or resource degradation. Others emphasized the need to limit the scope of such a centre's activities, possibly focusing on industrial or other technological accidents or transboundary incidents.

16. The types of activities most often proposed for the centre can be broadly grouped into three categories: (i) providing or co-ordinating emergency assistance; (ii) clearing-house and networking activities; (iii) research, training and technical assistance.

Inter-agency exploratory meetings on environmental emergencies, July 1990 and February 1991

17. The proposed centre was further considered at two informal exploratory meetings of key agencies and experts on environmental disasters and emergencies held in July 1990 and in February 1991. The July 1990 meeting focused on the issues raised in the report on Government and agency views on Governing Council decision 15/10, specifically: (i) the nature and type of environmental emergencies that need to be addressed; (ii) the extent to which the present capacity of the United Nations system to respond to environmental emergencies is adequate to that need; (iii) the functions and activities a centre or some similar mechanism would carry out; (iv) the financial and other resources a centre would require; (v) the best method of co-ordinating any new initiative with existing activities on environmental emergencies within the United Nations system.

18. Participants at the July 1990 meeting discussed the need to make better use of existing resources and to improve efficiency; the need for additional resources to support response, rehabilitation and prevention measures; and the need to identify any unmet needs, such as emergency situations for which the United Nations system does not have an adequate response mechanism. The meeting also considered a suggestion for an in-depth feasibility study for the establishment of a centre, taking into account the broad issues outlined above and based on the conclusions of the analysis of Government and agency views. There was considerable agreement on the need for further clarification of these issues, for an in-depth assessment of the present capacity of the United Nations to respond to environmental emergencies, and for a detailed description of the operational requirements of a centre.

19. The second meeting, held in February 1991, considered two reports prepared by consultants retained by UNEP. The reports dealt with both broad issues on the need and means to improve the capacity of the United Nations to respond to environmental emergencies and details of the practical operation of a centre, including a preliminary outline of a "switchboard mechanism" to meet communications requirements for improving response to environmental emergencies.

20. In discussing the two reports, the second meeting concluded that although many of the essential issues had been addressed, there remained a need to examine further the modalities of the operations of a centre. The meeting also concluded that emphasis be given to increasing active co-operation among the United Nations agencies to better address environmental emergencies. This could be done by, inter alia, enhancing the existing capacity of the emergency response mechanisms of United Nations agencies.

21. During the deliberations of the Governing Council's special session in August 1990, several countries expressed their support for the proposed centre. One country indicated its willingness to support the centre through scientific expertise, while two others stated their willingness to be actively involved in the development of the proposed centre.

22. As indicated earlier, the oil spills during the crisis resulting from the situation between Iraq and Kuwait and the burning oil emphasized the pressing need for such a co-ordinating body. Actions were launched by various United Nations bodies in a co-ordinated process at the initiative of UNEP and by the Regional Organization for the Protection of the Marine Environment (ROPME) in co-operation with UNEP. The International Maritime Organization (IMO) carried the responsibility of co-ordinating Government initiatives in dealing with the oil spills during the conflict.

Development of a centre for urgent environmental assistance

23. It is obvious that there is general agreement on the urgent need for strengthening the existing capacities of the United Nations system to deal with environmental emergencies.

24. Based on the analysis of Government and agency views on Governing Council decision 15/10, the results of the two exploratory meetings, and Government comments made during the second special session of the Governing Council, the Executive Director recommends proceeding with the development, on an experimental basis, of a centre for co-ordinating response to environmental emergencies based on the following principles:

(a) It would not be a new institution, but rather a small co-ordinating body acting as a switchboard and clearing-house;

(b) The co-ordinating unit would focus on referral and information-sharing activities between existing well-established emergency response mechanisms in various bodies and organizations of the United Nations system and those of various national Governments;

(c) It would have a steering committee composed of representatives of all United Nations agencies and bodies concerned and chaired by the UNEP Assistant Executive Director, Office of the Environment Programme;

(d) It would be primarily concerned with sudden events requiring urgent and immediate response, rather than the slow processes of environmental degradation;

(e) It would focus, at the beginning, on industrial, transport, oil spills and other technological emergencies;

(f) It would maintain rosters of consultants and experts on environmental emergencies and of sources of appropriate equipment, as well as a list of areas of possible risk;

(g) It would identify, in full co-operation with the agencies concerned, the needs of their emergency response mechanisms to respond more efficiently and effectively to these emergencies.

25. It is proposed that the centre would be established on an experimental basis at the beginning of 1992 with a senior consultant plus four or five staff members and a modest working budget (of the order of US$2 million for a period of approximately 18 months) at a site to be determined in consultation with United Nations agencies, bearing in mind the requirement for rapid communication. The experiment would be reviewed before the next regular session of the Governing Council in 1993, and the results presented to the Council for its consideration and decision on further steps that might be taken.

IV. THE GREEN BRIGADE

26. In his report to the second special session of the Governing Council, the Executive Director proposed the setting up of "volunteers for the environment: a green brigade" (UNEP/GCSS.II/2, paras. 150-152). He proposed mobilizing the commitment of people everywhere who are seeking ways to make a personal contribution to the environment and directing this commitment toward specific activities. He also suggested that young people, the future beneficiaries of a better environment, would be the mainstay of a worldwide "Green Brigade" movement. As indicated in the summary of the present document, when the oil spill off the coast of Kuwait occurred, scores of young people wrote to and telephoned UNEP, asking how they could be of assistance in dealing with the situation. This outburst of energy and enthusiasm has encouraged the Executive Director in his belief that there is a real need and use for the establishment of a "Green Brigade".

27. The concept of a Green Brigade could be realized in two phases. The first would be to work through existing organizations and networks to create an informal global coalition of groups and individuals who have "pledged" to act on the basis of a set of principles and guidelines to be issued by UNEP. The second would be to encourage and facilitate the formation at the local level of Green Brigade units, which would undertake a variety of activities to improve and protect the environment.

28. During the first phase, UNEP would link existing organizations into a broad support group or network called the "Green Brigade". Any organization agreeing to adhere to the principles and guidelines issued by UNEP would become a member of the Green Brigade and would receive a certificate from UNEP acknowledging that they were part of a world-wide movement to protect and preserve the environment. They would report their activities to UNEP, and UNEP would issue an informal newsletter describing all such activities. UNEP could also develop a manual of action ideas for members of the Green Brigade and facilitate "twinning" and mutual assistance arrangements, particularly between Green Brigade units in developed and developing countries. Further, UNEP would facilitate and co-ordinate the use of such units in environmental emergencies or in dealing with serious environmental problems (e.g. deforestation, desertification, solid waste) outside the territories in which the units reside.

29. During this first phase, UNEP would work in collaboration with a variety of individuals and groups the world over, including its Goodwill Ambassadors, youth network, and Global 500 laureates. For some groups, whose primary mandate is not the environment per se, the Green Brigade-related activities would be one aspect of a much broader range of activities. For others, such as existing environmental organizations at the national, regional and international levels, Green Brigade activities would be an integral part of their ongoing functions. This does not rule out, however, the establishment of new groups at the local level for the particular purpose of the Green Brigade movement. For such groups, UNEP might prepare a manual or resource kit.

30. UNEP already has links and co-operative relationships with a significant network of non-governmental organizations, community groups, individuals and enterprises dedicated in one way or another to protect the environment and to promote sustainable development. It is thus well placed to play a catalysing role in fostering the Green Brigade concept and in mobilizing interest and support for it. Under the aegis of the Green Brigade, UNEP would foster consultation, collaboration, and the sharing of information and experience with a view to giving each member a sense of being part of a larger movement and benefiting from it.

31. During the second phase, UNEP would encourage and assist young people around the world to work together as volunteers in project teams under the auspices of existing public and private organizations.

32. In this context UNEP could provide the blueprints for setting up Green Brigade teams at the local level to undertake specific projects. Such projects would be tailored to local needs, conditions and resources and draw upon local knowledge and experience. Members of such local teams would be eligible for membership in the world-wide Green Brigade movement and would be issued a certificate from UNEP in recognition of their contributions to the global environmental cause.

33. The first phase can be covered within the current 1990-1991 and the proposed 1992-1993 resources. There are indications that some industries might be ready to lend their support to such an exercise. An evaluation of the first phase would be presented to the Council at its seventeenth session. If the evaluation is positive, an estimate of the resources required to implement the second phase, as well as an indication of the sources of the required funding, will be submitted to the Council.